The CHEMIST

September, 1961

Dr. Lloyd Van Doren (right) accepting the AIC Certificate of Honorary Membership from Dr. Milton Harris, recent AIC president.

(See page 325)

Volume XXXVIII

AMERICAN INSTITUTE OF CHEMISTS

Number 9

A Case for Quality!

The Finest in Shipping Cases Exclusive with the Finest in "C.P." Acids

It's NEW . . . it's UNIQUE!
It's high strength, light-weight, easy to handle—provides the best protection that reagent acids ever had. This shipping case of shock absorbing expanded polystyrene—a development of Baker & Adamson packaging research—offers superlative protection in shipping and storage, and is available *only* with B&A "C.P." Acids and Ammonia.

Enthusiastic reports from B&A "C.P." Acid users point up such features as protection in transit . . . compact size . . . easier stockroom handling . . . simplified distribution to scattered locations.

When empty, these non-returnable polystyrene cases also offer interesting possibilities for use at home, in the laboratory, in many places. You'll be intrigued by the things you can do with them.

Specify B&A "C.P." Acids on your next order and get the all-new, foam containers as a bonus!

Safer! This new case cradles bottles in a form-fitting polystyrene foam cushion that smothers shocks, prevents breakage. Meets the most stringent ICC requirements. Case is chemical and weather-resistant, too—ideal for outdoor storage.

Lighter! The polystyrene case is much lighter than old-style cases; weighs less than 11 lbs. with empty bottles. Easier to lift and move. Costs less to ship.

Easier to Handle! Convenient finger grips, light weight, and cube shape make the case easy to handle. Tops and bottoms interlock for safe stacking.

Order these B&A Reagents in the Case for Quality—
Hydrochloric Acid, "C.P.", Reagent, ACS
Nitric Acid, "C.P.", Reagent, ACS
Sulfuric Acid, "C.P.", Reagent, ACS
Ammonium Hydroxide, "C.P.", Reagent, ACS
Acetic Acid, Glacial, 99.7%, Reagent, ACS

ALSO:
Nitric Acid, 40° Be., Technical
Acetic Acid, Glacial, U.S.P.
Perchloric Acid, 70%, Reagent, ACS
Perchloric Acid, 60%, Reagent, ACS

Allied Chemical

GENERAL CHEMICAL DIVISION
40 Rector Street, New York 6, N. Y.

The CHEMIST

Reg. U. S. Pat. Off.

Publication of

THE AMERICAN INSTITUTE OF CHEMISTS, INC.

60 East 42nd street, New York 17, N. Y.

Entered as second class matter April 8, 1936 at the Post Office at New York, N. Y., under Act of August 24, 1912. Second class postage paid at New York, N. Y. Issued monthly.

Subscription price, $3.00 a year to Members, $4.00 to Non-Members. Single copy, this issue, $0.35. Copyright, 1961, by THE AMERICAN INSTITUTE OF CHEMISTS, INC.

Vol. XXXVIII September, 1961 Number 9

THE AMERICAN INSTITUTE OF CHEMISTS

Council

Officers and Directors:

President, Dr. Johan Bjorksten
President-elect, Dr. C. Harold Fisher
Secretary, John Kotrady
Treasurer, Dr. F. A. Hessel
Chairman of the Board, Dr. Milton Harris

Councilors-at-Large and Directors:

Dr. R. P. Dinsmore Dr. S. D. Kirkpatrick
Dr. W. E. Hanford Dr. John H. Nair
Dr. Henry B. Hass Dr. L. H. Reyerson
Dr. D. B. Keyes Dr. W. J. Sparks
Martin B. Williams

Councilors:

Dr. E. M. Burdick, *Florida Chapter*
Dr. G. M. Cunningham, *Western Chapter*
Dr. J. W. Eldridge, *Virginia Chapter*
Henry E. Hancock, *Midwest Chapter*
Dan L. Henry, *Piedmont Chapter*
Dr. John L. Hickson, *New York Chapter*
Dr. Charles A. Horton, *Tennessee Chapter*
Dr. E. M. Kipp, *Philadelphia Chapter*
Dr. Wayne E. Kuhn, *Past President*
H. A. Levey, *Louisiana Chapter*
Lyle J. Mahar, *Niagara Chapter*
Dr. John F. Mahoney, *New Jersey Chapter*
Dr. Clem O. Miller, *Washington Chapter*
Dr. J. L. Rendall, *Twin City Chapter*
Dr. George F. Rugar, *Ohio Chapter*
Bernard E. Schaar, *Chicago Chapter*
Dr. Robert D. Schwartz, *Southwest Chapter*
G. H. Taft, *New England Chapter*
Dr. Walter W. Thomas, *Delaware Chapter*
Clark E. Thorp, *Beaver Falls Chapter*
Emerson Venable, *Pittsburgh Chapter*
Dr. Robert W. Walker, *Alabama Chapter*
Dr. A. H. Warth, *Baltimore Chapter*

THE CHEMIST

Editor, V. F. Kimball

Advisory Board:

Dr. Joseph F. Abere
William Q. Hull
D. H. Killeffer
Dr. Sidney D. Kirkpatrick
Dr. Wayne E. Kuhn
James W. Perry
Bernard E. Schaar
P. J. Wood
Dr. A. C. Zettlemoyer

Contributing Editors:

M. R. Bhagwat
D. H. Killeffer
Dr. Frederick G. Sawyer
Donald Slavin
Florence E. Wall
Martin B. Williams

Department Editors:

Dr. Ed. F. Degering, *Condensates*
Doris Eager, *Opportunities*
Richard L. Moore, *Public Relations*
Dr. Rudolph Seiden, *Chemical Books Abroad*
Dr. Kurt Konigsbacher, *Life with Chemistry*

• • •

Deadlines for THE CHEMIST: For the October issue the deadline is September 15.

• • •

THE AMERICAN INSTITUTE OF CHEMISTS does not necessarily endorse any of the facts or opinions advanced in articles which appear in THE CHEMIST.

IN THIS ISSUE

Editorial:

The Group Approach to Professional Problems **315**

Special AIC Announcements **316**

Arveson to Receive Chicago Chapter Honor
Western Chapter Officers
Dr. Swift to be Honored

How to Live with Your Job, ***Gerald Gordon, M.D.*** **317**

Report from the Committee on Legislation **324**

Chemical Patent Procedure, ***Dr. Lloyd Van Doren, Hon. AIC*** **325**

Personal Glimpses at Lloyd Van Doren,
Florence E. Wall, Hon. AIC **333**

The Chemists' Club Greets Lloyd Van Doren,
Dr. Lincoln T. Work, Hon. AIC **336**

How to Change to the Metric System **338**

Communications **339**

School Industry Cooperation
The Ten Most Wanted Chemists
Wanted: Manufacturers of Peroxidase
Articles on Patent Office Appreciated

Let's Push People Around, ***Dr. D. B. Keyes, F.A.I.C.*** **341**

Professional Appointments **343**

Opportunities **344**

For Your Library **345**

To Come in October

"Education for Understanding" is the subject of the acceptance address of Prof. Hans B. Jonassen, F.A.I.C., of Tulane University, when he received the Honor Scroll of the Louisiana AIC Chapter . . . If you believe that chemists attain their maximum productivity rate in their early thirties, read "Good Chemists Never Quit," by Dr. W. J. Sparks, Hon. AIC.

Advertisers Render a Service to You

Allied Chemical—General Chemical Division ..... *Inside Front Cover*
Bios Laboratories 348
Bjorksten Research Laboratories 340
Commercial Solvents ..... *Inside Back Cover*
LaWall & Harrisson 345
The Lento Press 346
Arthur D. Little, Inc. 323
Nopco Chemical Company 338
Phoenix Chemical Laboratory, Inc. 324
Robinette Research Laboratories, Inc. 324
Scientific Associates 347
Foster D. Snell, Inc. 342
Truesdail Laboratories, Inc. 316
U. S. Stoneware ..... *Outside Back Cover*

The Group Approach to Professional Problems

THE principal conclusion reached by the Central Planning Committee, as reported at our 38th Annual Meeting, was that AIC meetings would be most effective, if, instead of the lecture-type meeting, a forum-type meeting were substituted, at which the problems of chemists would be presented and the audience would be expected to work out solutions to these problems. In this way, the limited free time available to most scientific people could be put to more productive professional results, and the energy and ideas generated by the group approach would stimulate practical solutions. As Dr. Milton Harris, recent AIC president, expressed it, "Problems should not be tackled by listening to a speaker, but by working on them. It is not important how large such a group is. The small, articulate group will accomplish more if it actively works on professional problems."

The Twin City Chapter is the first AIC Chapter which has announced plans for such work groups. Dr. John L. Wilson, F.A.I.C., chairman of the Chapter, informs us that four areas of professional interest have been selected as subjects for four work groups. Each Chapter member may choose the group that he prefers to work with and to which he can make contributions out of his own individual experience.

The professional problems chosen for study are:

1. **Definition of a Chemist.** *Convener,* W. W. Benton.—The development of an adequate definition for chemist and for various technical assistants working in chemical laboratories; investigation of the legal angles; encouragement of uniformity in the use of terms in referring to chemists and their work by employment agencies, management, news media, etc.

2. **Communications.** *Convener,* Kenneth E. Owens.—This is to be a management development workshop.

3. **Utilization of Retired Scientists.** *Convener,* John L. Rendall.—A consideration of what can be done to make possible the continued productive effort of chemists and other scientists who have reached retirement age, but are physically and mentally capable of continued productive activity, even if on a less than full-time scale.

4. **Public Service.** *Convener,* E. Otheman Locke.—There are various areas for consideration here, such as assistance in improving our educational system; keeping track of current events and making expert information available to various segments of the public on questions in which chemical problems are involved; developing special speaking and public relations programs for non-technical groups to bring to them a better understanding of the chemist and other scientists; providing interesting and informative write-ups on chemists and scientists for use in public communication media.

There are a great many other subjects which would be appropriate for such work groups. Perhaps other Chapters will be interested in trying out the group approach to subjects of interest to them.

Special AIC Announcements

Arveson to Receive Chicago Chapter Honor

M. H. Arveson, F.A.I.C., coordinator of research for Amoco Chemicals Corporation, Chicago, Illinois, will receive the 1961 Honor Scroll Award of the Chicago AIC Chapter. Presentation will be made October 5, at a meeting to be held at the Furniture Club. Mr. Arveson is being recognized for "the courage needed to attack tough problems that beset the people in chemistry; for the ingenuity needed to devise solutions that are practical; and for the tenacity needed to apply these solutions successfully."

Western Chapter Officers

The Western Chapter has elected the following officers for the current season:

Chairman, Dr. Karol Mysels, Department of Chemistry, University of Southern California, University Park, Los Angeles 7, Calif. Telephone: RI 8-2311, Ext. 295.

Chairman-elect, John A. Kaasen, L. A. County Air Pollution Control District, 434 So. San Pedro St., Los Angeles 13, Calif. Telephone: MA 9-4711.

Vice Chairman, Noel W. Lane, Jr., 405 N. 19th St., Montebello, Calif., Telephone: PA 1-3321.

Executive Secretary, George H. Dye, Pennsalt Chemicals Corp., 2700 So. Eastern Ave., Los Angeles 22, Calif. Telephone: RA 3-9711, Ext. 29.

Recording Secretary, Gilbert E. Sinclair, Braun Chemical Co., 1363 Bonnie Beach Place, Los Angeles 54, Calif. Telephone: AN 9-9311.

Treasurer, Dr. Otto E. Lobstein, Chem-Tech Laboratories, 2361½ So. Robertson Blvd., Beverly Hills, Calif. Telephone: OLympia 7-0603 (From L. A. call OL 5-9924).

Representative to National Council, George M. Cunningham, Olin-Mathieson, 3848 E. Colorado, Pasadena 8, Calif. Telephone: MU 1-7477.

Councilors: Dr. Ulric B. Bray, Dr. Paul W. Jewel, Dr. Frederick G. Sawyer, Thomas J. Rollins, Fred H. Kienzle, and William L. Blalock.

Dr. Swift to be Honored

The Western AIC Chapter will present its 1961 Honor Scroll Award to Dr. Ernest H. Swift, chairman, Division of Chemistry & Chemical Engineering, California Institute of Technology, at a meeting to be held September 20, at the Huntington Sheraton Hotel, Pasadena, Calif. Speakers will be Dr. Lee A. Du Bridge, president, California Institute of Technology, and Dr. William N. Lacey, dean of the faculty. Dr. Swift is honored for his many years of teaching and his devotion to the profession.

TRUESDAIL LABORATORIES, INC.
Chemists – Engineers – Bacteriologists
4101 North Figueroa St. | Bay Area Affiliation
Los Angeles 65, | Air Pollution Investigations
California | 1300 Sansome St.
CApital 5-4148 | San Francisco, Calif.
Hawaiian Branch Office
Honolulu
Research & Development • Consultation
Analyses • Testing
Member: American Council of Independent Laboratories

How to Live With Your Job

Gerald Gordon, M.D.
Chief Psychiatrist, E. I. du Pont de Nemours & Co., Wilmington 98, Delaware

(Presented at a recent meeting of the Chicago AIC Chapter, Chicago, Ill.)
(Here slightly condensed.)

THERE is a widespread conviction that work, particularly the work of the executive, is some kind of unnatural and harmful activity. Apparently one may expend unlimited physical or mental energy in a hobby without fear, but the same energy expended in useful effort is considered a harmful stress. Work is treated as though it were an imposition upon mankind, rather than as a major source of happiness and gratification.

In recent years the businessman has been admonished that the pace of his life is killing him. He is threatened by such scare statements as, "Your next promotion may be your last." Others encourage him to be proud of his ulcer, a sort of businessman's "purple heart," as though it were a sign of virtue. He is advised to slow down, take it easy, take longer vacations, don't work so hard. Many men are frightened by this advice and find themselves in a neat trap. Most successful men achieved their positions through hard work and aggressiveness. They have had almost boundless energy to expend and have found great satisfaction in the struggle. What is the businessman to do now? Give up? One doesn't run a successful enterprise from a cruise ship. The misguided wretch who happens to enjoy work is in an even worse fix for, by implication, to continue is suicide. Social and economic pressures seem to degrade successful accomplishment and make him appear to be a sinner. All sorts of negative incentives are set up to remove temptation and make certain that the sin of success, if not punished, is certainly not to be rewarded.

It may be useful to re-evaluate some of these conclusions in view of available data. During the past half century, rules of hygiene and nutrition have been learned; man can manipulate his environment for greater comfort, security, and safety than could his forefathers. By accepted concepts, the wear and tear on his body should have become less as he learned to protect himself. The businessman succumbs eventually just as everyone else. But coincidental with the increased span of life, there has been a change in the conditions causing his departure. The infectious diseases have been replaced by the "stress diseases" or degenerative diseases and cancer. Accidents have moved up in relation to other causes . . . The stress diseases are today's killers. When a noted figure has a heart attack, it is front page news, but we do not know of hundreds of other victims stricken on the same day.

Studies in our company comparing the occurrence of stress diseases in the executive group with the occurrence of the same disease entities in the general company population show the same rate of incidence. Other medical authorities have found that the executive has no different pattern of disease than the general public.

To understand the nature of stress disease, consider some of the body's basic adaptation and survival mechanisms. The body and mind are integrated, in that the body supplies the brain and nervous system with nourishment. These in turn interpret the needs of the body for survival, implementing coordinated activities to provide for them. The process is based on homeostasis—the maintenance of a constant and healthy state within, as the body moves in an ever-changing environment filled with hazards to existence. The body is alerted to its needs through the nervous system, and adapts itself to the changing external environment. The body is admirably designed for this. It maintains its temperature within a 2 or 3° critical level despite external changes of 50-75° F. It resists great stresses inflicted by toxic materials, mechanical injury, infecting organisms, so long as they are compatible with life.

When first exposed to stress, the body becomes alarmed and over-reacts. This reaction is somewhat inefficient in that all parts of the body react when they need not. If a sedentary worker is suddenly exposed to the stress of digging a ditch, the entire body aches, not only the muscles stressed. If the work is continued, certain muscles will grow stronger; unnecessary side reactions will subside, and the body will discipline itself into a state of efficient, comfortable adaptation. The stress is then met with less effort, less strain, and greater efficiency.

Psychological or emotional stress can likewise have the same effects. The normal man working under conditions in modern industry for 8-10 hours a day, particularly the executive, can hardly be said to be exposed to stresses incompatible with biological existence. Spending $20,000 is no more difficult a decision for the executive than is spending $20 for the janitor. By the time he becomes an experienced executive, the businessman should have learned to function efficiently even with the pressures of his job. Yet the reality of stress disease cannot be ignored . . . Coronary heart disease, arteriosclerosis, high blood pressure, gastric ulcer, colitis, migraine, allergies—all of them suspect stress diseases—occupy top position in the mortality table.

In searching for their causes, we must consider the nature of man's emotions and their place in his existence. A fixed belief in our culture is

that strong men should not be bedeviled with emotions. Male children are taught that crying is a sign of weakness; that fear leads to cowardice, and anger to the gallows. Most adults believe that self-pity is almost a cardinal sin, that worry leads to stomach ulcers, and that emotions are enemies to be conquered. But Nature does not do foolish things; all persons have emotions and emotions must have some logical function. It is impossible to measure the force of emotions. The rapid pulse, the labored breathing, the clenched fist, the punch in the nose, though manifestations of emotion are no more the force of emotion than is the light from a bulb the force of electricity. Emotions are endlessly confused with their external manifestations. When it is necessary to tell someone to stop some misbehavior, our confusion between emotions and behavior leads us to tell him to control his temper, or his fears. But these are emotions, the internal flowing of energy, which cannot be destroyed or even controlled. It may be diverted, but will then seek another outlet, for nature demands its release in useful accomplishment—or stress disease.

The four basic phenomena of the nervous system, enabling man to adapt to and survive in a changing environment, are pain, hunger, fear, and rage. Few attempt to simply will away pain and hunger. However, although the same purpose is served by all four phenomena, man has decided that the Creator erred by putting fear and anger into him, and that this error must be corrected. The true purpose of these phenomena is to promote survival by disciplinary control over the body. Pain drives us to locate and remove the irritation; hunger drives us to seek food; fear, to flee; rage, to defend ourselves. There is nothing biologically built into man directing him to foolish or self-destructive behavior. Yet any form of energy can be compressed to the point where it becomes dangerous. Natural, free-flowing emotions guide man into healthy survival behavior, always gauged in quality and quantity to the needs of the moment. The human mind and body may be likened to a computing machine which is useless without a power supply. The human power supply is emotion.

Emotion must be distinguished from behavior. A hard-breathing, red-faced man, flailing about destructively, is not necessarily undergoing the emotion of anger. Conversely, a pleasant, calm-appearing person may be in an intense rage, plotting murder; a convincing actor can exhibit any behavior while internally anticipating a pleasant week-end. Emotions are functionally equivalent to pain, which orders our behavior so that we operate in our own best interest. This is not selfishness in its accepted sense of greed and meanness. It is healthy self-interest, as occurs when pain forces

us to remove a cinder from the eye, and it in no way conflicts with the rights of others. Similarly, emotions, by their pressures and tensions, tell us to look into our lives, see what's wrong, and fix it up, for it is almost always highly personal and defensive, and in no way conflicts with the rights of others. To remain physically and mentally healthy, we must accept this control exercised through our emotions.

For every event in our lives, there is a flow of emotion to organize the body to meet our problems; yet, over and over, my patients tell me that they have no real problems, only petty irritations too trivial to be upset about. They do not realize that if we fail to meet each little problem effectively there is soon quite a collection of unsolved problems. The little increments of repressed emotional energy accumulate to a considerable tension; the danger is more serious in the aggregate. But man in his infinite wisdom has reorganized himself into ineffectiveness. When the tension rises high enough, it may seek outlets through innocent organs—the stomach, heart, blood vessels. This is the second line of warning; since we do not accept the warning of emotions, nature tries hurting us physically with pain. At this point the individual is diagnosed as being nervous. He, his family, his friends, his boss, often his physician, have one prescription. This consists of removing him from all unpleasant situations and insisting that he leave work, and rest. I have followed cases in which people have been so removed from responsibilities that they become totally incapacitated and nonproductive, in effect, concealed pensioners. A problem cannot be solved by refusing to be aware of it or by evading our responsibility for its resolution.

There is little inherent in the work situation to cause emotional difficulties. Improper mechanisms, however, are brought into the work place. Usually they are techniques of avoiding unpleasantness, developed in childhood for dealing with stressful situations. A person with a high degree of mental health will automatically seek and use effective mechanisms; most people, having poorer mental health, suppress those mechanisms. If a person finds that things do not work out well for him, he must look within himself; it is rare to find a solution in the external environment. This is a painful process, avoided so long as our explanations blaming something or someone are acceptable. When life becomes difficult, it is reasonable to want to get away, but the self-disciplined person, knowing that problems are not solved that way, courageously sees the struggle through to a resolution. A person who evades responsibilities will repeatedly follow this pat-

tern, but usually maneuvers the circumstances so that someone else has to protect him.

It is not always a kindness to encourage this evasion by acting upon the individual's own prescription. It is usually kinder to handle the situation in such a way that he develops courageous patterns of behavior through solving his own problems, with the accompanying greater security. Self-diagnosis is particularly dangerous in emotional difficulties, because the mind needed to diagnose the trouble is not functioning efficiently. The supervisor cannot accept a subordinate's excuses for his failure. The superior has an obligation to examine all circumstances surrounding the subordinate's shortcomings, and if the error lies in the individual's failure to adapt to the realities of his situation, the supervisor must in fairness to the man, the organization, and himself, exercise authority so that the subordinate meets his responsibilities with effective personal action.

The supervisor who evades his responsibility to inform subordinates directly of the facts regarding their performance, creates unresolved tensions and stresses in himself, for his success is dependent upon their performance. One of the most common complaints from employees is that they are not clearly informed regarding their job performance. This is vital for all of us to know, for our jobs are our bread and butter. Even job security guaranteed by company policy, when not earned by productive performance, will not give us feelings of security. We may be able to fool society, our bosses, and ourselves about how well we are doing our job, but we can delude ourselves only for so long, because nature will not tolerate it. It profits little to have an unearned pay check, if the price of self-deception is heart disease or stomach ulcer.

The common excuse for failure to meet this basic supervisory responsibility is that the supervisor believes he does not like to hurt others, or that it is wrong to upset people. He fails to recognize that there is no way for anyone to evade his responsibilities for long. To perform this unpleasant task we ourselves must first be upset. Since we believe emotional upsets harmful, we attempt to control our emotions, thus aborting the drive to action. The result is an increase in tension for all concerned.

Modern man has forgotten that life is basically a conflict. So is the struggle for existence among groups and societies. Democrats conflict with Republicans, labor with management . . . Ignoring the emotional warnings of danger does not remove the danger. The full free life which sometimes includes a good scrap has been submerged in a utopian desire for eternal harmony. Lacking any realistic way of achieving it, man has developed

the tranquilizer. Alcohol has long been a partial answer to man's desire for occasional false tranquility, but he knew its price was the hangover. We do not yet know what the body may have to pay for the tranquility of the tranquilizer. The person who refuses to permit himself to become emotionally upset about a business situation because, in advance, he presumes it to be hopeless, is missing solutions which might be forthcoming if he permitted his healthy emotions to motivate his quest.

The other side of the coin shows men attempting to do the impossible. There is a widespread belief that management and supervision should make all their subordinates happy, not simply provide a healthy atmosphere in which they can find their own salvation. It is impossible for anyone to make another person happy other than to so conduct himself that he does not interfere with that person's finding his own salvation. Yet I have talked with supervisors who were frustrated when an employee refused to be happy under their supervision, as though it were their fault. There is in this a danger for the subordinate as well as for the supervisor. Creating an atmosphere that implies that the efforts will make an employee happy leads him to expect this miracle. When the efforts fail, employees are bitter and resentful. People do react well to decent, fair, honest treatment, but can we do more?

For emphasis, I have oversimplified and exaggerated. Do not misconstrue my remarks to mean that people do not sometimes work too hard or need a vacation, or that every problem will be solved if we get angry enough. People do need or want a vacation, or want to put aside a knotty problem temporarily, or get fed up with their jobs and want a change. I only warn against using any panacea to evade meeting with effective personal action the real problems of our daily lives; I warn against evading the internal discipline exercised through our emotions by our biological drive to survive. Man brings most of his misfortunes, his failures, and stress diseases, upon himself by trying to make himself over into something allegedly more nearly perfect that the Creator made him. His strong, persistent, delusional beliefs make him act as though he has accomplished it, and he either fails to fulfill his normal obligations or demands impossible things of himself. Either extreme is hazardous.

Man believes he can free himself of anger and fear; that he has powers to create a heavenly world of peace and harmony without conflict; that he can make all his associates, including his wife and family, happy. His normal elemental drives—anger, fear—are being repressed to dangerous destructive tensions in the false belief that they are inimical to his

welfare and that of the group. The results are, in effect, suicide in the form of stress diseases. Modern man thereby has sacrificed his identity, freedom, independence, self-reliance, courage, in the damp laundry of mediocrity. The failure to make himself over into something less than nature intended leads him into frustration to which there is no end. This frustration is quite different from that which he deliberately seeks in playing golf. There is reasonable hope that someday he can learn to play golf well. But I cannot see any hope that he will be able to improve upon his fundamental physiological nature.

Rather than arbitrarily attempt to improve upon his, as yet ill-understood, human nature, he might try to learn more about his true nature. Perhaps the Creator did a better job on him than he believes.

Dr. W. E. Hanford, Hon. AIC, vice president for research and development, Olin Mathieson Chemical Corp., New York, N. Y., will receive the Chemical Industry Medal of the American Section of the Society of Chemical Industry, at a meeting to be held Oct. 13, in New York, N. Y. The award is made "in recognition of his outstanding contributions to the development and progress of the chemical industry."

Dr. Herman F. Mark, F.A.I.C., has been named dean of the faculty of Polytechnic Institute of Brooklyn, Brooklyn 1, N. Y. He is founder and director of the Polymer Research Institute of Polytechnic.

Dr. Frank J. Kreysa, F.A.I.C., has been appointed staff associate for physics, chemistry and related sciences at the Science Information Exchange of the Smithsonian Institution, Washington, D.C.

Dr. P. S. Baker, F.A.I.C., was recently appointed superintendent of the Advanced Isotopes Development Department of the Isotopes Division of the Oak Ridge National Laboratory, Oak Ridge, Tenn.

Arthur D. Little, Inc.

ADL offers experience and capability in:
- Corporate Planning and Organization
- Advanced Research and Engineering
- Product Research and Development
- Production Engineering
- Market Analysis and Sales Planning

ADL scientists and engineers work closely with client organizations in performing assigned work through any desired stage of development.

Consultants to Industry
SINCE 1886

Cambridge • New York • Chicago • Washington
San Francisco • San Juan • Edinburgh

Report from the Committee on Legislation

H.R. 10 introduced by Rep. E. J. Keogh (D., N. Y.)

THIS bill would provide for allowance of income tax deductions by self-employed individuals who establish voluntary pension plans. It is similar to bills, introduced by Rep. Keogh in previous Congresses, which failed to pass.

H.R. 10 has passed the House of Representatives and has been referred to the Committee on Finance of the Senate, where hearings have been held. It has not been reported out of the Senate Committee, nor is it believed likely that the Senate, as a whole, will vote on it during this session. The Treasury Department, while admitting that pension fund inequities exist for self-employed persons, nevertheless, opposes the bill at this time, for the reason that a comprehensive overall tax recommendation will be presented to Congress next year by the Administration.

The National AIC Council previously approved a policy decision on the principle of tax relief for pension funds established by self-employed individuals. In October, 1956, the Council re-confirmed this decision in connection with one of Rep. Keogh's earlier bills. The Committee on Legislation makes no recommendation for action during this Congressional session.

The Committee on Legislation appreciates the expressions of interest in specific legislation that it has received and urges that AIC members continue to communicate concerning significant legislative matters. The Committee is particularly desirous of receiving information from local Chapters on legislation at state levels. Upon occasion such legislation could have an impact on chemists and chemical engineers, but the Committee can only become aware of such legislation through the cooperation of AIC members "on the spot."

ROBINETTE RESEARCH LABORATORIES, INC.

Industrial Research • Consultation
Technical Surveys
Product Development
Textile, Ion Exchange Technology
Chemical Market Research

Berwyn, Pa. **NIagara 4-0601**
Member, Amer. Council Ind. Labs, Inc.

PHOENIX
CHEMICAL LABORATORY, INC.

Fuel & Lubricant Technologists

Chemical Tests • Physical Tests

Qualification Tests

3953 Shakespeare Avenue
CHICAGO 47, ILL.

Chemical Patent Procedure

Dr. Lloyd Van Doren, Hon. AIC
325 Aepli Drive, Tempe, Arizona

(Presented when the author received Honorary AIC Membership at a meeting sponsored by the New York AIC Chapter, April 27, 1961, in New York, N. Y.)

IT is highly desirable that the student of chemistry should acquire some knowledge of chemical patents and the procedure in accordance with which they are granted. The end sought is that when he passes into industry and, in the course of his duties, makes an invention or is placed in charge of others who make inventions, he will be better able to assist the attorney in whose charge the preparation of the application for Letters Patent is placed. Also he will be better qualified to evaluate and properly limit the scope of his own and others' inventions, and be more competent to perform his own duties and to direct the investigative activities of others . . .

It was with remarkable vision that those charged with the drafting of the Constitution of the U. S. foresaw the requirements which a system should possess in order to insure that the general public and those making inventions would be mutually benefited. Of equal importance was their foresight in providing a system which would be the very foundation of, as well as a great incentive to, our industrial development. To provide for such a system our Constitution, Article I, Section VIII, declares:

> "The Congress shall have power . . . to promote the progress of science and useful arts by securing for limited times to authors and inventors, the exclusive right to their respective writings and discoveries."

It was reputed that James Madison was largely instrumental in introducing this provision into the Constitution.

Most of the present-day patent systems go back historically to the old English system. The English system has developed rather through a process of evolution than logically—even somewhat irregularly. The aim, however, has always been to foster new industries rather than directly to stimulate inventive genius. In the 16th Century, the royal purse was frequently in need of replenishment, and a favorite means was by the granting of monopolies in exchange for cash. The abuse of this procedure gave individuals the sole rights to sell the ordinary commodities of life, such as salt, sugar, and tobacco. The legislative statute abolishing such abuses, in 1628, has now become famous as the "Statute of Monopolies." It, however, made an exception in the recognition that the crown should retain the power to grant a monopoly to the "true and the first inventor" of "any manner of new manufactures within this realm." This exception

proved to be of the greatest importance as the foundation upon which the English patent system was built. The whole complex structure of patent law throughout the world is probably based on this rather slender foundation.

In exercise of the power given to our Congress under the Constitution, the first patent law was enacted in 1790. The main provisions of our present statute were established in 1836, and the underlying principles have undergone little modification since their enactment. In accordance with this Act our present system of examination as to operability and novelty came into being. The present series, in accordance with which our patents are numbered, began subsequent to the passage of the Act of 1836. The term of the patents was initially for a period of 14 years, with the privilege of extending this for a further period of 7 years upon request. In 1870 the patent statutes were modified. The privilege of renewing a patent was withdrawn and the term set for 17 years. Our patents since then have been granted for this term.

The first patent, No. 1, was granted on July 13, 1836, to John Ruggles of Thomaston, Maine, "For Traction Wheels," specifically "Locomotive Steam Engine for Rail and Other Roads." Patent No. 1,000,000 was granted, Aug. 8, 1911, to Francis H. Holton of Akron, Ohio, for a "Vehicle Tire." Patent No. 2,000,000 was granted Apr. 30, 1935, to Joseph Ledwinks of Philadelphia, Pa., entitled "Vehicle Wheel Construction." This illustrates the growth in patent practice, inasmuch as 75 years were required to issue the first million patents, whereas it required only a little less than 24 years to issue the second million.

According to the patent statutes, an individual, if the Patent Office considers him to be first inventor of an alleged invention, is granted a patent bestowing on him the *prima facie* right to a monopoly of the fruit of his labors for 17 years. It is frequently thought, erroneously, however, that a patent grants to the individual the right to make, use and vend that which constitutes his invention. This right was already his because it was the fruit of his own labor and came to him under the common law. What the patent grants to the individual is the right to exclude all others from making, using, and vending that which constitutes his invention for a period of 17 years. A patent grant is a contract which is entered into between the government, representing the people of the U. S., and the inventor. The inventor is permitted to exclude all others from practising that which he has invented, for the consideration that he disclose that which he has invented in sufficient detail so that, at the expiration of the

patent, the public may be able to avail itself of the benefits of the invention.

The statutes set forth that a patent may be obtained for a new and useful process, machine, article of manufacture, composition of matter or any improvements thereof, which may be new and useful, providing certain conditions pertain. The statutes also set forth that the grant of a patent will not be barred nor will a patent be declared invalid because a patent was first taken out in a foreign country, unless the application on which the foreign patent is granted was filed more than 12 months before the application is filed in the U. S. If an application is filed within 12 months of filing the foreign application, the application then shall have the effect that it would have, had it been filed here on the same day that it was filed abroad. This is termed the International Convention, and may be summed up with respect to an applicant having filed an application in our Patent Office, in that he is allowed a 12-month period in which he may file applications for patent in foreign countries. If he files under the International Convention, he is awarded the date of his U. S. application for priority purposes and is thereby protected from publication or prior use which may take place between the time that he files his U. S. application and that at which he files his foreign application. This protection is valuable in cases where the invention has been published or gone into public use almost immediately after the application has been filed.

The First Step in Protecting an Invention

The first step in making an invention is the mental conception of that invention; the inventor must have the idea that something can be made, or done, and after he has the idea he must then try it out. In those situations where a man makes an invention and no one else has made the same invention at about the same time, little complication arises and the pitfalls are less numerous. However, no inventor should assume that someone else has not thought of his invention or will not soon think of it. Consequently, it is of the utmost importance for the inventor to be able to prove his invention from the date of its conception through its date of successful completion, the latter being known as "reduction to practice."

He must remember that, according to present complex patent law, his unsupported word that he did so-and-so at such-and-such a time is not sufficient to establish the fact. In order for it to be satisfactorily established, it must be supported or corroborated by a witness, preferably by several witnesses. When he first conceives an idea he should immediately write it down, preferably in a bound note-book, date it, and have one or

more trustworthy persons read and sign it. These persons must also be able to understand the proposed invention so that, in case of interference, they may become competent witnesses.

Hence; in the performance of research on any invention, it is of the utmost importance that notebooks be properly kept and used. Data recorded on scraps of paper, loose-leaf sheets, etc., have no legal value whatsoever unless each is signed, dated, and witnessed. A sound procedure includes the following items:

1. A rigidly bound notebook should be used, not a loose-leaf or spiral bound book into which additional sheets can be inserted or occasional sheets removed. In such a book, pages should be numbered consecutively; none should be skipped during use; and the whole of both sides of each sheet should be used. Where at all feasible, separate notebooks should be employed for different projects.

2. Entries should be made in ink or indelible pencil, unmistakably identified (signed by the individual making the entries), dated, and witnessed. Pages should be dated at the top when begun and signed and dated at the top when finished. Dates should not be abbreviated, and all signatures should be in the usual form employed by the individual. Cross out unused portions of completed pages.

3. When work is begun on a project, the first entry should be a statement of the problem and the proposed mode of attack.

4. Sketches should be made of all important apparatus or mechanisms, showing essential parts, connections, and the relative size or capacity of the elements.

5. All operating details and variations should be mentioned, such as those for chemical processes—reagents, temperatures, pressures, time required, yields, etc. These data should be complete and not entrusted to the memory of the experimenter.

6. All calculations, observations, and conclusions should be carefully recorded. The apparently trivial factor in one experiment may be very important in another.

7. Results should be explained, in spite of the familiar statement that figures speak for themselves.

8. Practices which arise from thoughtlessness should be avoided, such as broad statements that experiments were unsuccessful and the use of such "categorically negative symbols as 'NG' for 'No Good.' A letter 'R' marked across a page to indicate that the data have been reported can be twisted to mean 'Rejected.' Erasures and other modifications which might appear to have been made at a later date should be avoided"; errors should be crossed out, not erased. Coined names and trade names for materials and articles should not be used without chemical or functional identification. Negative results are often as important as positive results; therefore, when such results are obtained, an explanation should be given if possible. For example, phrases such as "the temperature fluctuated," "the pressure varied," "the flask broke," etc., should be used.

The Second Step is a Literature Search

After making proper records of an invention, the next step should be a search through the literature and the Patent Office records in Washington to determine if the discovery is new or old. If an inventor or company is following a trail someone else has blazed, prompt knowledge of it

may prevent a heavy loss both in development work and in seeking patent protection. The Patent Office is a repository of many hundred thousands of different patents and publications of this and foreign countries, and it is not much of a task to find the nearest patents to an invention. Whether or not the patents found show your idea, they will be quite helpful to you in showing the efforts of others and possibly the blind alleys not to be entered. Experience has shown that a thorough knowledge of prior patents and publications is most helpful in any development program.

The Third Step is Diligence

Immediately after having conceived the invention, the inventor should take all necessary steps to reduce it to practice. If he does not do this and someone else makes the same invention even after he has conceived it, and reduces it to practice before him, he will probably lose his invention. This taking of steps to carry the inventive idea to practical fruition is known in patent circles as "diligence." Many patents have been lost through lack of diligence. If the original conception of the invention requires materials or tools not at hand, the inventor must take immediate steps to get these, and he should keep a record of his orders, invoices, and other papers so that he may prove conclusively that he was acting in a diligent manner. He should also be sure that someone knows that he did these things.

When all of the materials are at hand, he should proceed to carry out the invention. Here again it is necessary that he have witnesses to prove that he did what his patent application states. Furthermore, his witnesses must know and understand what the inventor is doing; they must know that he is using the materials he says he is using; they must know when he gets a material analyzed that the particular material he has produced is that which is analyzed. Patent cases have been lost because a man who had made a compound and sent it for analysis, with a label on the bottle stating what it was, could not prove that the bottle received by the analyst was he same bottle he had sent and that it contained the same material. Therefore, every step in the invention should be closely watched by witnesses who can later state unequivocally that what the inventor says is true in fact.

The Fourth Step is the Application

The ultimate objective of the inventor is to obtain a patent on the invention and to realize on that patent. It is important to file an application in the Patent Office at a reasonably early date. The filing and prosecution of an application in the Patent Office is the fourth step in protecting an invention. To obtain a patent, the inventor must prepare an application for

letters patent and forward it to the Commissioner of Patents. The application must contain a written description of the invention and of the manner and process of making, constructing, compounding, and using it, and it must be in such full, clear, concise, and exact terms as to enable any person skilled in the art or science to which it appertains, or with which it is most nearly connected, to make and use the invention so that it may be distinguished from other inventions and from what is old. He must particularly point out and distinctly claim the improvement or combination which he considers his invention or discovery. The application consists of three parts:

1. The petition which usually carries a power of attorney, and in which the inventor asks that he be granted a patent for his alleged invention.
2. The specification and the claims. The specification sets forth the art to which the invention pertains; the objects accomplished by the invention; a general description of the invention, including illustrative embodiments or illustrations presenting the way considered by the inventor as the best for practicing his invention. Then the specification may close with a presentation of the properties or effects produced by the invention and the applications which may be made of it.
3. The oath which the statute provides shall set forth, *inter alia*, that the inventor verily believes himself to be the original and the first inventor or discoverer of the process, machine, manufacture, composition of matter, or improvement thereof for which he solicits a patent; and that he does not know and does not believe that the same was ever known or used before his invention or discovery. Further, that to the best of his knowledge and belief, the invention has not been in public use or on sale in the United States for more than one year prior to his application, or patented or described in any printed publication in any country before his invention, or more than one year prior to his application, or patented in any foreign country on an application filed more than 12 months previous to his application here. He must also give the country of which he is a citizen, the place where he resides, and whether he is a sole or a joint inventor.

Unfortunately, it is sometimes assumed by an inventor, and even by his attorney, that the drafting of the specification and claims is a matter of comparatively minor importance. The unsoundness of this assumption must be apparent at once. The strength of any patent depends solely upon the manner in which the specification and claims are drawn and the care which has been given to the work of their drafting. Unless the specification and claims are commensurate and properly describe and set forth the invention, they do not properly support a patent, because the invention of any patentee is theoretically that which he discloses, and the specification and claims constitute this disclosure. The specification and claims must be considered together, for the infringement of a patent depends upon the claims, but no worker would know how to use the invention by simply reading the claims. The stronger the patent, the less likely it is to become a matter of litigation, whereas the reverse is equally true, that the weaker the patent, the more likely is it to become a matter for litigation.

Accordingly, chemical patents must be drawn with great care. It is hoped that it will never be necessary to litigate a patent, but this frequently happens, so the drafting of the specification and claims must be done with that possibility in mind. It must be drafted in such terms as are usual in the art, but also in language which may be readily grasped by a court, and in terms which are unambiguous. The courts consider the drafting of a specification for a patent (which is a legal document, in the nature of a contract) as one of the most difficult instruments to draw. In the case of *Topliff vs. Topliff*, the Supreme Court made the following statement:

> The specification and claims of a patent, particularly if the invention be at all complicated, constitute one of the most difficult legal instruments to draw with accuracy, and in view of the fact that valuable inventions are often placed in the hands of inexperienced persons to prepare such specifications and claims, it is no matter of surprise that the latter frequently fail to describe with requisite certainty the exact invention of the patentee, an error either in claiming that which the patentee had not in fact invented, or in omitting some element which was a valuable or essential part of his actual invention.

The second part, or claims, is the more important part of the specification, for it is upon these entirely that the protection rests. It is frequently the better practice in preparing the specification and claims to draft the claims first, as thereby the scope of the invention will have been fully worked out and the phraseology determined upon, so that when the specification is drafted, the same phraseology will appear and the scope thereof be wholly commensurate with the scope of the claims. This is extremely important, as otherwise the claims may define the invention more broadly than the description in the specification warrants, and hence the claims are open to rejection on the ground that they are not properly supported in the specification. Or the claims may be too narrow, so that the inventor does not receive the full protection to which he is entitled. It might happen that more than one invention is disclosed in the specification, whereas only one is claimed. Should this happen, the inventor would be protected only as to the one invention, and the public would be free to use the other without any compensation to the inventor. Thus the claims must be most carefully drafted, for the further reason that in the event of a suit for infringement the whole protection lies within the claims. If they are poorly drawn, the inventor may have a patent only and no protection. It is necessary that the drafter of a specification and claims must possess vision, imagination and the ability properly to outline the field of invention and to delimit its scope. Otherwise the years following the grant of a patent may contain many regrets.

Inventors should be aware of the difference between anticipation and domination. In general, anticipation is the prior published disclosure of the idea on which the inventor has developed his invention. If he is anticipated only, he may carry out the invention, but may not get a patent on it. In this case, if the invention is somewhat different from the anticipation reference, but still close enough to prevent the inventor from getting a patent, he might well practice the invention as a secret process. If, however, he makes an invention and it is found that someone else has made a slightly different invention but covered it in broad enough claims to include the new invention, then the later invention is said to be dominated, and he cannot practice the invention without the permission of the person owning the broad patent.

Patent-conscious inventors realize the value of narrow patents even though they be dominated by broad patents of others. Suppose Inventor A discovers a broad new chemical reaction and covers it by patent. Suppose that Inventor B finds that, although the invention of A works over the broad range of conditions specified by A, only a narrow portion of the broad range gives the best results. He may secure a patent covering these narrow conditions, but his patent is dominated by the broad patent of A and he cannot practice his invention. However, A cannot work in the narrow range of conditions specified in the patent of B without a license from B. Therefore, the patent of B becomes very valuable, even though dominated. It is, therefore, extremely important in applying for a patent to know all of the prior art in the particular field, and to specify the optimum conditions. Here is where the patent attorney can be very useful. He can by careful study of the prior art, define the invention in such a way that it is neither anticipated nor dominated.

The U. S. patent system has been one of the most important cogs in the machinery of developing technological improvement. The incentive to the individual to have a patent and the possibility of financial reward as a result of it; the incentive of a corporation to back the inventor both in the research stage and after the issuance of a patent; the incentive of investors to put money behind the development and exploitation of inventions, all surround our patent system. So the general dissemination of knowledge about patents is far beyond being a technical question. It is something that needs to be more widely understood. Inventions and patents on them are a necessary part of our present day development and they must be reckoned with in every line of manufacture and every branch of endeavor. Every chemist and chemical engineer has some opportunity to

make important inventions and usually it is only by patenting them that they can be profitable and strengthen the foundation upon which the chemical industry is founded.

We are living in an age of wonderful scientific, technical and industrial development, produced first by the spirit of research that has gone hand in hand with the growth of liberty and has produced abstract truths. The genius of the inventor has applied these truths to a useful purpose. It is the spirit of investigation and the desire to improve and the guarantee of reward that has made this age develop, as well as the absence of those factors that brought development in previous ages to a standstill.

The service that the inventor has given has carried the world forward at a rate that is but dimly comprehended. It has increased the sum of knowledge and produced or increased those unexplored fields in which the unknown or unattainable of yesterday is the goal of today and the starting point of tomorrow. The human race has benefited due to the zeal of the scientist and the genius of the inventor. In new fields this and future generations may work out still higher planes of development and civilization, each decade improving on the work of its predecessor. Through it all the world must remember the debt it owes to the inventor and must pay to him his reward, if his genius is to be kept in harness for the benefit of mankind.

(For the citation to Dr. Van Doren, see page 343)

Personal Glimpses at Lloyd Van Doren

Florence E. Wall, Hon. AIC
Consultant, 210 E. 68th St., New York 21, N. Y.

(Presented when Dr. Van Doren received Honorary AIC Membership, April 27, 1961, at a meeting of the New York AIC Chapter, in New York, N. Y.)

ANYONE that chooses to be introduced by a specialist in historical research does so at his own risk. Dr. Van Doren's professional colleagues knew all about his sterling qualities—his patience, serenity, thoroughness, dependability—but they could tell me little else. The bare bones of a biography (as in the *Who's Who* and *American Men of Science*) tell what a wonder he is, but not how he got that way. I decided that if I wished to learn about Dr. Van Doren I had better go to original sources, and trail him where he had been. It proved to be an interesting project.

Lloyd Van Doren was born on a farm in New Germantown, N. J.,

a small town in Hunterdon County, now called Oldwick. He was the youngest of three sons, in a family whose forebears were among the earliest Dutch settlers in the American Colonies. His education was started in Barnet Hall, a school of one room, one teacher, all grades, all subjects, where he was known as "Lengthy," and was the brightest pupil in his class. For the last two years of high school he attended Gettysburg Academy, in Pennsylvania; and then moved over to what was then Pennsylvania—now Gettysburg—College. He majored in chemistry, joined Phi Gamma Delta, and was graduated at 20 as a Bachelor of Science with a Phi Beta Kappa key. He then spent three years in graduate work at Johns Hopkins University, where he broadened his interests in inorganic and organic chemistry with physical chemistry and applied electricity. He earned his Ph.D. degree in 1915 and was elected to the graduate fraternity of Gamma Alpha. Incidentally, his Alma Mater, Gettysburg, altered the usual succession in "education by degrees," and gave him the degree of M.S. a year later.

For the next few years, Dr. Van Doren taught chemistry, first as an instructor at the Lowell Textile School, in Massachusetts; then as an assistant professor at the University of Akron, Ohio; and finally as full professor and head of the Department of Chemistry at Earlham College, in Indiana. When the United States entered World War I, he joined the Chemical Warfare Service with the rank of first lieutenant.

After a term as special research assistant at Johns Hopkins, Dr. Van Doren embarked on what was to become his principal interest and occupation—patents. He started as chemical adviser to the law firm of Emery, Varney, Blair and Hoguet, and then joined Chemical Foundation as consulting chemist and patent attorney. His diligence there, his successful prosecuting of nearly 250 patent applications, is still remembered and commended. At this time, too, he was a member of the board of chemical advisers for a flourishing periodical, *The Chemical Age*. For this paper he conducted a department of "Current Patents and Patent Problems"; and also contributed many articles on chemistry, chemical research, and chemical patent causes and procedures to several journals published by the American Chemical Society. The reputation he established at that time followed him in all his productive professional career.

With the exception of two years as patent attorney with Allied Chemical & Dye Corporation, Dr. Van Doren has always been associated with members of the legal profession. He has, in fact, been with essentially the same firm, which, after a kaleidoscopic succession of changes in

name, has become the group of Watson, Leavenworth, Kelton, & Taggart, from which he resigned in 1959.

Dr. Van Doren was interested in THE AMERICAN INSTITUTE OF CHEMISTS from its very inception. In 1923, when it was organized, he was elected vice president, and he held this office through successive administrations until 1929. He rarely missed a meeting—and they were many in those difficult early days—and his willing assistance was invaluable in legal matters, on the articles of incorporation, qualifications of members, employment contracts, and anything else for which his specialized knowledge could be useful. He served one season as chairman of the New York Chapter, and was on various committees, even after 1945, when he started his 14 years as our national secretary. Concurrently he was secretary of The Chemists' Club.

One could wonder whether, and how, anyone so active in professional affairs could possibly find time for anything else. Dr. Van Doren did, though. He lived for many years in North Plainfield, N. J., where he enjoyed his home, and was a devoted husband and father. By his son, Cecil, of North Plainfield, he has two charming grand-daughters; and by Lloyd, Jr., of Frankfurt, Ky., he has another grand-daughter and a grandson, Lloyd III. The Van Doren farm, by the way, is still actively operated by the family of his brother, John. In his home town, Dr. Van Doren was active in many civic enterprises. He joined the Boosters Club. As a member of the Board of Education for seven years, he organized a rag-tag high school band into a well-disciplined harmonious ensemble in snappy uniforms ("Mr. Music Man"). He also established a prize for this band. As a member of the Common (Town) Council for four years, he was particularly interested in health problems. His scientific knowledge must have injected a new kind of thinking here, for it was said that he was "the first member of the Council that knew the difference between a germ and a German." Most recently, Dr. Van Doren served for six years as a trustee of Gettysburg College.

There simply had to be a personal side to this many-faceted public servant, and it became a challenge to ferret out some indications of the human being. You know, that type of person into which the AIC aims to turn chemists. Anyone that does not smoke or drink must have some redeeming vice. Dr. Van Doren's seems to have been a hankering for sweets, which he was able to satisfy by devious means, even during wartime rationing. Hobbies? He says he has none, but he enjoys gardening, and has for years been an enthusiastic user of a polaroid camera. As for

recreations, he never cared for bridge, but for a time played regularly at the forerunner of it—500. He has also enjoyed dancing, and in recent years, lawn bowling at Sky Top, Pa. More than a hobby, perhaps, is an obsession for cleanliness, and his fetich for soap, all kinds, which he used to collect as others collect stamps. Much of this energy has gone into taking care of his cars, because, from his first, a Model T, to his elegant Imperial Chrysler, he has always enjoyed motoring.

So what emerges from this synthesis is a well-rounded human being, after all. It has been said that "Youth continues as long as the individual retains the desire for new experiences or is willing to recombine old ones." It must be this spirit of eternal youth, plus that inherited spirit of the early pioneers, that led Dr. and Mrs. Van Doren to seek their future in the balmy, sunny Southwest. Contented retirement it may be for a while, but I could bet that, if it has not happened already, *dolce far niente*—"doing sweet nothing"—will soon lead to participation in whatever activities can benefit from their personalities and abilities. He has become a member of the Chamber of Commerce of Tempe, Arizona.

The Chemists' Club Greets Lloyd Van Doren

Dr. Lincoln T. Work, Hon. AIC
Consultant, 36 West 44th St., New York 36, N. Y.

(Presented when Dr. Van Doren received Honorary AIC Membership, April 27, 1961, at a meeting of the New York AIC Chapter, in New York, N. Y.)

DR. Lloyd Van Doren, The Chemists' Club congratulates you on this award of Honorary Membership in THE AMERICAN INSTITUTE OF CHEMISTS. The Club appreciates the invitation to participate in the INSTITUTE'S program of award, and I am happy to represent the Club as its spokesman.

Honorary Membership is given in recognition of service to the chemical profession. It is a signal honor in which service to the AIC and that to The Chemists' Club are but a portion of all that is truly professional in your being. It is not barred to those who have served the INSTITUTE; but it is not given as a prize at the end of such service. Rather it is considered when perspective is developed and emotion is dimmed. It is not given for age, although most people build this record in their matured years. I suspect that you will long enjoy this award in the restful climate of Arizona. The award is necessarily limited in its scope, but not too limited for a reasonably good selection of deserving people.

In this new status, you must not forget The Chemists' Club. We have a claim upon you. I have a patent here, and acknowledge now that we have given the INSTITUTE a free license under it:

Patented April 27, 1961 0,070,011

PATENT OFFICE

0,070,011

Ideal Club Secretary and Process of Making Same

Mr. Chemists' Club, New York, N. Y.

No Drawing. Application May, 1945
Serial No. 000,000
3 Claims

The purpose of this invention is to develop a product having specific useful attributes. More particularly, it relates to an ideal club secretary and the process of making same.

In the prior art pertaining to secretaries of social, business, and professional clubs, it is common to encounter such persons serving in this position without recompense. In this class, there have been many careless individuals who merely accept the post as an honor. Important matters for which they are responsible are not promptly and meticulously handled, and at times the organization is injured through failure to act upon important matters properly. In the prior art, there is found another type of unpaid club secretary. He is dedicated to perform a valiant service for the Club or for his own honor, and he does not hesitate to order the other officers and the Board around to do his every wish. The prior art also discloses the paid type of secretary. To him, the task is a job, to be performed within stated hours under instructions from several people who are certain that they know how to run clubs. There is in the prior art a type of secretary, salaried or not, known as the payola boy. No further reference need be made to this type as it is a highly inferior and dangerous kind.

In the practice of this invention, we take a man of good family, educated in science through the doctorate, and subject him to service in the teaching profession. He is indoctrinated with a bit of law, at least enough to be a patent attorney, though it is preferable that he be truly skilled in it. We find him in the practice of patent law in a neighboring office building, and we subject him to the attrition common to the long-hair's round table. When this sequence of steps has been taken, the resultant individual will be nominated and elected secretary. He will possess the qualities of a dedicated man without a passionate mission; he will be faithful and wise in his service, following the desires of the Club as made known to him; and he will not neglect essentials or perform carelessly. He will persistently refuse to make speeches; yet his influence and service to the Club will be invaluable, and he will have no enemies. He will combine in a good balance all of the desirable qualities to be found in the prior art; and he will have none of the vices. The essence of this invention is in a combination of these virtues not heretofore found which have contributed mightily to the Club. Example I

Dr. Lloyd Van Doren

We therefore claim:

1. A kindly, dedicated, competent man serving his professional and business club faithfully, giving freely of his time and effort to fulfill the many duties of his office as Club Secretary quietly and effectively.
2. The process of making the type of man described in Claim 1.
3. Dr. Lloyd Van Doren.

A SKILLED HAND IN CHEMISTRY...AT WORK FOR YOU

NOPCO
WETTING AGENTS

- Sulfated Fatty Acids
- Sulfated Fatty Esters
- Sulfonated Esters
- Sulfonated Naphthenates
- Fatty Amines
- Polyethylene Glycol Fatty Esters
- Polyoxyethylene Alkylphenol Ethers
- Sulfated Tridecyl Alcohol-Ethylene Oxide Adducts

NOPCO®
NOPCO CHEMICAL COMPANY
60 Park Place
Newark, N.J.

Harrison, N. J. • Richmond, Calif. • Cedartown, Ga.
Boston, Mass. • Chicago, Ill. • London, Canada

The National Safety Congress will meet Oct. 16-19, at the La Salle Hotel, Chicago, Ill. **Dr. E. G. Meiter,** F.A.I.C., director, Industrial Hygiene Div., Employers Mutuals of Wausau, Milwaukee 16, Wis., is general chairman of the Chemical Section of the program.

How to Change to the Metric System

With scientists and engineers currently discussing the pros and cons of changing the United States from the Anglo-American to a Metric system of units, Carl F. Kayan, professor of mechanical engineering at Columbia, has proposed a seven-point program to aid the public, scientists and engineers if they decide to make the change. In the *consumer-public* phase:

(1) Revise elementary school arithmetic programs, de-emphasizing common fractions. Stress decimal values instead.

(2) Extend decimalization practice for the existing pound, inch and foot, with elimination of the mixed-unit measurements of weight and length.

(3) Streamline present tables of weights and measures and drop units rarely used.

(4) Expand use of metric terms in the press, on radio and television to help condition public to a possible change.

In the *technological* phase:

(5) Extend use of energy-rate of watt into non-electrical fields, i.e., kilowatt rather than horsepower.

(6) Revise subject matter of engineering-mechanics, with emphasis on the use of the absolute-system philosophy, using "mass" as the basic unit and "force" as a derived unit, as found in the CGS and MKSA metric systems.

(7) Extend the "dimensionless" presentation of experimental data, in conjunction with basic reference values to facilitate operations in any system of units, as exemplified by "specific-heat," and "specific-gravity."

From: *Columbia Research News*
Vol. XI, No. 2.

Communications

School-Industry Cooperation

To the Editor:

You will be interested to learn that the Edison Foundation has recently issued an excellent report entitled, "School-Industry Cooperation for Better Science Education in New Jersey." Upgrading the quality of education in science and mathematics greatly concerns all of us, and I am sure you will find this report of New Jersey's experience stimulating and interesting.

In brief, the major companies in New Jersey contributed funds which were administered by the Edison Foundation. These funds, spent over a two-year period primarily for the expenses of a coordinator for this whole project, demonstrated the invaluable contribution that industry can make to secondary school science education. For example, three school-industry conferences and eight forums were held. Traveling demonstrations were provided by industry. In-service programs enabled science teachers to observe up-to-date industrial techniques. This project, having demonstrated its value, has now been incorporated as a permanent part of the program of the New Jersey State Department of Education.

With Federal help to education so much in the spotlight at the moment, this New Jersey project demonstrates that solutions for educational problems are possible at the State level. It is likely that preservation of local control and local character, so desirable in our secondary educational program, is possible in no other way.

I endorse this worthwhile project and would like to see it repeated in as many areas as possible. I urge AIC members to cooperate in putting New Jersey's experience to work in their areas, and suggest that they send for a copy of the complete report, which is available from the Thomas Alva Edison Foundation, 8 West 40th Street, New York 18, N. Y.

—Dr. William E. Holland, F.A.I.C.
New York, N. Y.

The Ten Most Wanted Chemists

To the Editor:

Dr. B. R. Stanerson has made a valuable contribution (THE CHEMIST, July 1961, pp. 245-251) to our understanding of the desiderata used by employers in their selection of chemists for various categories of work. The most interviewed applicants at the ACS Clearing House of Sept. 1960 and March 1961 were taken by him as a measure of the demand for chemists with their qualifications. All of those so interviewed in September were males.

In addition to a preference for male chemists, other factors besides their professional ability do enter, either consciously or unconsciously in many cases, into the employment

of chemists. If the applicant is a male, white, Anglo-Saxon, American-born Protestant, he starts with a decided advantage over others. Such discrimination is not peculiar to the employment of chemists, of course. Its practice is still quite general throughout the U. S., despite marked improvement in the past few years. Illinois, for example, has just passed a fair employment practices act. It is applicable, however, only to employers of 100 or more the first year, 75 the second, and 50 thereafter.

Indicative of the wide-spread practice of discrimination in employment policies by some large corporations were the agreements to end such discrimination which the U. S. Government entered into on May 25 with Lockheed Corporation and with 8 other large defense contractors this month. Lockheed has some 60,000 employees. President Kennedy is reported to have said at the signing of the Lockheed agreement:

> This program is a long-range commitment by the Lockheed Corporation and the U. S. Government to work together in improving and expanding the job opportunities of minority groups.

Just why such separate non-discriminatory agreements should have been necessary is somewhat difficult to understand, since government contracts with suppliers now include a clause to that effect. It is impossible to estimate how much our national economy and our scientific advancement have suffered by this discrimination. There is no question, however, about the harm it has done to our national prestige.

—B. E. Schaar, Hon. AIC
Chesterton, Ind.

Wanted: Manufacturers of Peroxidase

To the Editor:

We are seeking the addresses of prime manufacturers of an enzyme, "Peroxidase." Any information would be appreciated.

—B. Ginsburg, *Director of Research*
Clinton Laboratories,
6010 Wilshire Blvd.,
Los Angeles 36, Calif.

Articles on Patent Office Appreciated

To the Editor:

The July 1961 CHEMIST contains excerpts of remarks made during the tour of the Patent Office (at the AIC Annual Meeting) . . . They are interesting and enjoyable . . . I would like to compliment you on the format and style of your fine publication . . .

—Isaac Fleischmann
Washington, D.C.

BJORKSTEN
RESEARCH LABORATORIES
• MADISON 1, WISCONSIN
P. O. Box 1175
Alpine 6-5581
• HOUSTON 6, TEXAS
2405 Norfolk Street
JAckson 6-3640
• WASHINGTON 6, D. C.
1700 K Street, N. W.
STerling 3-6510

Let's Push People Around

Dr. D. B. Keyes, F.A.I.C.
480 Park Ave., New York 22, N. Y.

IT is only human to want to shove the other fellow around. It is fun for some people to "control" others, first by giving them a privilege and then denying it. Our patent system was created many years ago and it gave the inventor or the owner, for a limited time, the privilege of preventing other fellows from using the patented invention. There are those who feel that this was a great mistake and they come forth from time to time screaming that this privilege should be eliminated or at least modified. They are the self-appointed representatives of the "Public" and, apparently, for that segment which are incompetent or just plain shiftless.

I first "met the attack" in the spring of 1923 at a Council Meeting of the ACS in New Haven, Conn. A distant relative of mine, distinguished president of a chemical company, asked that the ACS go on record as favoring a change in our patent laws to force the use of all patented inventions, and if the owner of a patent failed to use the invention covered by the patent, he then should be forced to license others to do so. What could be fairer? He explained that during World War I, his men had tried to operate several German inventions patented here, without success because of incomplete disclosure of the processes. He said that it was in the national interest, as well as that of his company, to have the German plants actually operating in this country so that in time of war we could seize them and discover their secrets.

At that time I was a "technical office boy" for an even more distinguished president of another chemical company. I went to New Haven as a sort of "missionary to the Indians." I explained to the ACS Council (largely college professors with little interest in patents) that an aggressive chemical company was far more interested in developing its own inventions than it was in discovering the inferior inventions of its competitors. Furthermore, I pointed out that "we" were interested in patent protection, not just a patent. To obtain real patent protection on a process, for example, alternative processes must be patented. Only one process can be operated at a time; certainly a chemical firm does not want its competitor, with no expensive research department, to have the legal right to use a process developed at considerable time and expense by the firm.

In answer to the question as to why certain foreign countries had

"working" clauses or "compulsory licensing" clauses in their patent laws, I said that these countries were on the defensive and feared competition, as evidenced by the fact that these same countries relied on cartels to maintain their foreign trade. I ventured the guess that our highly competitive system, aided by our patent policies, would eventually make them look like "backward" nations. Fortunately for all of us, our system has done just that.

In his rebuttal my distinguished opponent merely smiled, said I was quite wrong, and proceeded to tell a funny story about his yachting with Kaiser "Bill" prior to World War I. The vote was then taken, and, as you might guess, the college professors all voted for the yachtsman and then happily turned to more important matters such as, Should we spell it "Sulphur" or "Sulfur?" When I reported my defeat to my president, he laughed heartily and told me not to worry, that the Hardware Association had plenty of sense and it would block the proposal in Washington. This it did, thus not only "saving" the ACS and industry but our Country.

We have received very few replies to our Patent Questionnaire published in the July issue of THE CHEMIST. If anyone who reads this (you don't have to be a member of AIC) will fill out the questionnaire (or a photostat of it) and will write me why he can not see my viewpoint as expressed 38 years ago, I shall be overjoyed to reply. My old opponent long ago passed on to a land of better yachting, I hope, and cannot speak for himself. Incidentally, as said on the TV commercial, if you don't enclose your name and address, we will be unable to send you the free reply.

SEND FOR **Free Data** *ON RESEARCH*

- ☐ Analytical Services
- ☐ Product Evaluation
- ☐ Bacteriology & Toxicology
- ☐ Food Technology

Foster D. Snell, inc.
CONSULTING CHEMISTS + CHEMICAL ENGINEERS
29 West 15th Street
New York 11, New York
WAtkins 4-8800
Direct Dialing Area 212
Baltimore, Md.
Bainbridge, N. Y.
MEMBER AMERICAN COUNCIL OF INDEPENDENT LABORATORIES

Dr. Frank J. Steele, F.A.I.C., chairman of the Connecticut AIC Chapter, is also chairman of the Employees Advisory Council of the Retail Division Sales Training Program of the Greenwich (Conn.) Chamber of Commerce.

Richard H. Fairbanks, Sr., F.A.I.C., is now research scientist with General Instrument Corp., Semi-Conductor Division, 600 W. John St., Hicksville, L. I., N. Y.

Professional Appointments

Sept. 4, 1961. Chicago, Ill. Conrad Hilton Hotel, Room PDR No. 4. AIC Social Hour in connection with ACS Chicago Meeting. 5:30 p.m. AIC members and guests are welcome.

Sept. 20, 1961. Pasadena, Calif. Huntington-Sheraton Hotel. Dinner meeting of Western Chapter. Award of Honor Scroll to Dr. Ernest H. Swift, chairman, Division of Chemistry & Chemical Engineering, California Institute of Technology. 7:00 p.m. Speakers: Dr. Lee A. Du Bridge, President of Calif. Institute of Tech., and Dr. William N. Lacey, Dean of Faculty. For information: Stuart R. Garnett, Blue Diamond Co., 1650 S. Alameda St., Los Angeles 54, Calif.

Sept. 25, 1961. New York, N. Y. The Chemists' Club. Meeting of the AIC Board of Directors and National Council. Board meets at 5:00 p.m., Council at 5:30.

Oct. 5, 1961. Chicago, Ill. Furniture Club, 667 McClurg Court. Honor Scroll Award Meeting of Chicago Chapter, 7:00 p.m. Honor Recipient, M. H. Arveson, Coordinator of Research, Amoco Chemicals Corp., Chicago.

Nov. 2, 1961. Philadelphia, Pa. Engineer's Club. Dinner meeting of Philadelphia Chapter. Speaker, Dr. James L. Jezl, Manager, Basic Research, Avisun Corp., who is the present chairman of the Philadelphia ACS Section. Subject, "Basic Research on Polyolefins." For reservations: Dr. Justo B. Bravo, Research & Development Div., Sun Oil Co., Marcus Hook, Pa. Telephone: HU 5-1121, Ext. 627.

Nov. 8, 1961. Los Angeles, Calif. Roger Young Auditorium. Meeting of Western Chapter. Subject: Registration & Licensing of Chemists. For information, George H. Dye, Pennsalt Chemicals Corp., 2700 South Eastern Ave., Los Angeles 22, Calif. Telephone: RA 3-9711, Ext. 29.

Jan. 10, 1962. Los Angeles, Calif. Roger Young Auditorium. Meeting of Western Chapter. Subject: Legal Definition of a Chemist. For information: George H. Dye, Pennsalt Chemicals Corp., 2700 South Eastern Ave., Los Angeles 22, Calif. Telephone: RA 3-9711, Ext. 29.

Feb. 1, 1962. Philadelphia, Pa. Penn Sherwood Hotel. Philadelphia Chapter. Honor Scroll Award Dinner. Recipient to be announced. For reservations: Dr. Justo B. Bravo, Research & Development Div., Sun Oil Co., Marcus Hook, Pa. Telephone: HU 5-1121, Ext. 627.

Mar. 14, 1962. Los Angeles, Calif. Roger Young Auditorium. Meeting of Western Chapter. Subject: Labor Unions for Chemists. For information: George H. Dye, Pennsalt Chemicals Corp., 2700 South Eastern Ave., Los Angeles 22, Calif. Telephone: RA 3-9711, Ext. 29.

April 5, 1962. Philadelphia, Pa. Engineer's Club. Dinner Meeting of Philadelphia Chapter. For reservations: Dr. Justo B. Bravo, Research & Development Div., Sun Oil Co., Marcus Hook, Pa. Telephone: HU 5-1121, Ext. 627.

May 3, 1962. Valley Forge, Pa. Tally-Ho Motel-Hotel, on Route 202. Meeting of Philadelphia Chapter. Student Award Dinner. Speaker, Dr. Charles C. Price, Director, John Harrison Lab., University of Pennsylvania. Teachers and parents of awardees invited. For reservations, Dr. Justo B. Bravo, Research & Development Div., Sun Oil Co., Marcus Hook, Pa. Telephone: HU 5-1121, Ext. 627.

May 9, 1962. Los Angeles, Calif. Roger Young Auditorium. Meeting of Western Chapter. Student Awards will be presented. For information, George H. Dye, Pennsalt Chemicals Corp., 2700 South Eastern Ave., Los Angeles 22, Calif. Telephone: RA 3-9711, Ext. 29.

May 10-11, 1962. Chicago, Ill. Edgewater Beach Hotel. 39 Annual AIC Meeting. The Chicago Chapter will be our host. H. F. Schwarz, Sherwin-Williams Co., 116th St. & Champlain Ave., Chicago 28, Ill., is chairman of the General Arrangements Committee.

Dr. Lloyd Van Doren Honored

Honorary AIC Membership was presented to Dr. Lloyd Van Doren, longtime secretary of the AIC until his retirement to 325 Aepli Drive, Tempe, Arizona, at a meeting sponsored by the New York AIC Chapter, held at the

Hotel Shelburne, New York, N. Y., April 27, 1961. The reception was sponsored by Watson, Leavenworth, Kelton & Taggart and by U. S. Vitamin & Pharmaceutical Corporation.

Dr. John L. Hickson, vice president of the Sugar Research Foundation, Inc., New York, N. Y., and chairman of the New York Chapter, presided. Dr. Van Doren was introduced by Florence E. Wall, consultant, New York, N. Y., and by Dr. Lincoln T. Work, former AIC president, and consultant, New York, N. Y.

The award of Honorary Membership was presented by Dr. Milton Harris, vice president of The Gillette Company, and president of the AIC. Dr. Van Doren accepted the Certificate of Honorary Membership with an address on "Chemical Patent Procedure." (See this issue of THE CHEMIST for the presentation talks.)

The citation reads:

To *Dr. Lloyd Van Doren*

Who has contributed, from the very day he started as a charter member, thirty-nine years of dedicated work to The American Institute of Chemists, and who for fifteen years served as its secretary, at all times working diligently and effectively as part of his unselfish efforts to enrich the life of his fellow chemists.

Opportunities

Doris Eager, M.A.I.C.

Chemists Available

Well known market promotion and public relations executive managing international and domestic operations in major industrial firm desires new challenge and opportunity. 13 years experience market research, commercial development, advertising, public relations in electronics, plastics, chemicals & specialties. Three years university lecturer and chemical research. Pre-Ph.D. N.Y.U., honors. F.A.I.C. Box 90, THE CHEMIST.

Research Chemist. F.A.I.C., Research & development of industrial cleaning compounds, rust and corrosion preventives, alkaline and acidic descalants. Also worked on control of water pollution and waste disposal. Experience includes technical sales representation, group leader in research and development, technical director. Listed in *American Men of Science, Chemical Who's Who*, and forthcoming *Who's Who in America*. Location open. Available immediately. Box 92, THE CHEMIST.

Liaison, Research, Consulting — F.A.I.C. 20 years chemical research (catalysis, Physical chemistry, rocket fuels); 6 years diversified advisory-development-organizing activity (with slant to wood and mineral), heading state-supported college advisory agency for industry. M.S. Seeks new service opportunity: research, development, public relations, writing. John M. Sayward, Randolph, Vermont.

Purchasing Executive: Excellent knowledge current Brasilian industrial capabilities and Portuguese language; 10 years experience (2 Brasil) as department head & consultant for international chemical engineering-construction company; 2 years experience chemical manufacturer included sales, market research, production. B.S. chemistry; graduate work chemistry and business. Presently employed. Box No. 94, THE CHEMIST.

Positions Available

Senior Research Chemist, synthesis of new monomers, functional compounds, other organics. Ph.D., with two to six years experience in chemical research. Salary commensurate with experience and ability, plus excellent fringe benefits. Company is world wide petro-chemical organization headquartered in eastern U. S. Box 91, THE CHEMIST.

Director of Central Research. Large diversified industrial chemical manufacturer. Requires Ph.D., organic or inorganic, who can give effective technical leadership to well established research laboratory. Salary in excess of $25,000 plus tax-sheltered fringes. (Replies go unopened to independent consultant and no discussion with employer until you have been contacted for OK.) Box 93, THE CHEMIST.

Arthur S. LaPine & Co., Chicago 29, Ill., has changed its name to LaPine Scientific Co. Its subsidiary, formerly Tenso-Lab, Inc., at Irvington-on-Hudson, is now called LaPine Scientific Co. (New York).

For Your Library

Graduate Education in the United States

By B. Berelson. McGraw-Hill Book Co., 1960. A volume in the Carnegie Series in American Education. 346 pp. $6.95.

This volume consists of two essays, connected by the report on a public opinion poll (of graduate deans, graduate faculty and recent Ph.D.'s). Dr. Berelson, as director of Columbia's Bureau of Applied Social Research, devotes most of his time to analyses of the data he has gathered. Anyone familiar with graduate education will find interesting material on such perennials as the purpose of graduate education (college-teacher preparation vs. research training); comparisons with law and medical education; support of students; the value of dissertations; the position of the Master's; the foreign language requirement. The details in this middle section will be of concern primarily to those actively involved in graduate education, who will find interest—or comfort, in the comparisons.

This reader, as an observer rather than an active participant, was most interested in the two essays. The first is historical and traces the elements of the debate from 1876 to the present. The perspective helps to evaluate the significance of the present debates. The second essay is a resume of the major research findings and, more important, a statement of Dr. Berelson's recommendations. They range from the provocative to the controversial, with only a few that are obvious. It is here, rather than in the statistical section, that Dr. Berelson may have made his contribution to the non-institutional reader.

—Dr. Lillian W. Kay

Polysaccharides in Biology

Transactions of the Fifth Conference on Polysaccharides in Biology. G. F. Springer, Editor. Josiah Macy, Jr. Foundation, N. Y. 1960. 227 pp. 6½ x 9½". $7.00.

This volume contains the transactions of the fifth conference in biology organized by the Josiah Macy, Jr. Foundation. The material is divided into 3 sections: Muramic Acid; Chemistry of Cell Wall; and Specificity of Saccharides. The conference is based on a system of questions, criticisms, and comments. This modern method of presentation helps considerably in understanding the subject matter. The participants in the conference are prominent representatives of their respective fields. This series is an important contribution to the chemistry and biology of poly-saccharides.

—Dr. Henry Tauber, F.A.I.C.

LABORATORY SERVICES
for the
FOOD and DRUG INDUSTRIES

DRUG EVALUATION,
FOOD ADDITIVE STUDIES,
CHEMICAL ASSAYS,
BIOLOGICAL ASSAYS,
CLINICAL STUDIES,
RESEARCH

LaWALL & HARRISSON
Dir. B 1921 Walnut St., Philadelphia 3, Pa. LO 3-4322

Thermodynamics for Chemical Engineers

By Harold C. Weber and Herman P. Meissner. John Wiley & Sons, Inc., 1959. 507 *pp.* 6" x 9¼".

Standard, up-to-date thermodynamics, with a theologic touch as in problem 4, p. 157, to illustrate available energy. Problem 4: It has been proposed that Hell must be isothermal and have an absolutely constant elevation above or below sea level, since at least some capable scientists and engineers are believed to have led sinful lives. By what line of reasoning could this proposition be defended?

—Dr. John A. Steffens, F.A.I.C.

Organic Chemistry

Allan R. Day and Madeleine M. Joullie. D. Van Nostrand Company, Inc. 1960. 864 *pp.* 6" x 9¼". $9.50.

An introductory organic text intended for chemistry majors, which emphasizes mechanisms and structures. Physical methods of determining bond nature and molecule structure are clearly presented.

—William M. Dunne

Chemical Books Abroad

By Dr. Rudolph Seiden, F.A.I.C.

Georg Thieme Verlag, Leipzig: *Pharmakologie und Grundlagen der Toxikologie*, by F. Hauschild; 2nd ed., 1182 pp., 149 ill., 352 tables; DM 47.—The importance of the chemical and physical processes for the pharmacological and toxicological reactions is emphasized in this up-to-date textbook.

Wissenschaftliche Verlagsgesellschaft, Stuttgart: *Medizinisches Woerterbuch*, by D. W. Unseld; 3rd ed.; 439 pp.; DM 29.50.—A concise English-German and German-English medical dictionary; it brings also chemical and other related scientific terms.

Akademische Verlagsgesellschaft Geest & Portig, Leipzig: *Physikalisch-chemische Praktikumsaufgaben*, by A. Encken and R. Suhrmann; 5th ed., 379 pp., 140 ill.; DM 19.50.—Describes 131 physical-chemical experiments, using classical as well as modern measuring methods and apparatus, including electronic, spectrochemical, and high vacuum equipment.

Dechema, Frankfurt a.M.: *Achema Jahrbuch* (1959/61), by H. Bretschneider; 1346 pp. (in 2 vol.).—This year book was made available without charge to all visitors of the June, 1961, Achema Congress and chemical engineering exhibition. It is not only a very complete catalogue describing chemical plants and equipment in German, English, French, and Spanish, but also a reference work with progress reports from 147 manufacturers of industry and laboratory apparatus, instruments, and machines, and from 106 educational and research institutes; there are also listed 1,200 exhibitors, from 15 European countries, who offer more than 7,000 items.

V D I-Verlag, Duesseldorf: *Rechtschreibung der technischen und chemischen Fremdwoerter*, by H. Jansens and L. Mackensen, 2nd ed., 276 pp. DM 17.—Gives the etymology, spelling, and hyphening of more than 20,000 technical and chemical words (from ab and Abachiholz to Zypresse and Zytase) which originated in classical or modern languages, but are now found in German professional literature.

Fachbuchverlag, Leipzig: *Chemiefasern*, by S. A. Rogowin; 1959, 675 pp. (150 ill.); DM 52.—Translated from the Russian, this textbook describes the chemical processes taking place when chemical fibers are produced, as well as the various technological methods used in the manufacture of the different types of fibers, such as cellulose (pulp), viscose and other rayons, and various modern synthetic poly-materials. • *Technologie der chemischen Industrie, I*, by J. Kunisch and W. Steiner; 1960, 190 pp. (77 ill., 14 tables); DM 6.80—Discusses briefly and in easily understandable language facts and figures of the inorganic chemical industry. • *Technische Formeln*, by C. P. Berger *et al.*; 1960, 374 pp. (305 ill.); DM 7.80.—A pocket book which contains a multitude of formulas used by chemists and other scientists and engineers whenever they are working on problems of mathematics, physics, electrotechnic, etc.

Iliffe & Sons, London: *F B I Register of British Manufacturers* 1961, by the F B I (Federation of British Industries); 33rd ed., 1166 pp.; sh 50.—A most important reference book for businessmen anywhere in the world, listing nearly 8,000 British industrial firms and their products, trade names, and trade marks under more than 5,400 different key words arranged alphabetically in 8 sections.

Foster D. Snell, Inc., New York 11, N. Y., has published the first directory of chemical companies in the European Common Market and Free Trade Association. Entitled, "The Common Chemical Market" it lists over 6000 chemical manufacturers and dealers.

THE LENTO PRESS, INC.

Distinctive Printing

441 Pearl Street New York, N.Y.

WOrth 2-5977

The Council Committee on Professional Relations and Status of the American Chemical Society will sponsor a special symposium on "Organization Systems for Effective Utilization and Advancement of Chemists in Industry," September 6, at the ACS convention in Chicago, Ill. Speakers include **Dr. Bernard S. Friedman,** F.A.I.C., on "Problems Encountered in Administering and Advancing Industrial Chemists"; **Dr. George L. Royer,** F.A.I.C., on "The Dual Ladder as One Solution"; **Dr. Sidney M. Cantor,** F.A.I.C., on "People-Oriented Technical Organizations," and **Dr. Milton Harris,** recent AIC President, who will speak at the luncheon, on "What Should We Worry About?"

Minnesota Mining and Manufacturing Co., St. Paul 6, Minn., recently demonstrated its new all-organic, heat-resistant fiber, called "Pluton." It is available as a fabric or can be worked into laminates reinforced with high-temperature phenolic resin to form structural parts, such as missile nose cones, which must withstand intense heat.

Dr. Moses Konigsberg, F.A.I.C., vice president in charge of marketing for Polymer Industries, Inc., Springdale, Conn., announces that a universal binder for starch-based warp sizes for synthetic and natural fibers has been developed and named "Polyfilm B-2."

COMPLETE
LABORATORY
SERVICE...
Chemistry, Pharmacology, Toxicology, Clinical Studies, Bacteriology, Pathology, Biochemistry, Product Development, Consultation, FDA-FTC Counsel, New Drug Applications.
• Large & Small Animal Studies
• Human Patch Tests
• Visible, Infrared Spectroscopy
• Ultraviolet
• Radioactive Tracers
• Chromatography
WRITE FOR BROCHURE
SCIENTIFIC ASSOCIATES®
3755 FOREST PARK AVENUE
ST. LOUIS 8, MISSOURI • JE. 1-5922

Trans-World Publishing Co., Euclid Ave. & East 107th St., Cleveland 6, Ohio, announces that *Global Electronics,* a new specialized electronics magazine, will make its first appearance in Nov., 1961. Like *Global Technology,* the new magazine will review, digest and report technological information in translations from foreign literature.

James J. Doheny, F.A.I.C., was in charge of the booth occupied by the American Chemical Society and the National Chemical Exposition, at the ACHEMA Exposition in Frankfurt, Germany, in June. Afterwards he made a photographic trip into East Africa, principally in pursuit of animal pictures.

Dr. Lloyd A. Hall, Hon. AIC, who retired in 1959 to live in Pasadena, Calif., has been appointed by the Food & Agriculture Organization of the United Nations, to conduct a 3-months survey of the food processing industries of Indonesia. He leaves this month for Rome, Italy, where he will receive a briefing on his duties before going on to Djakarta, Indonesia.

Neal M. Draper, vice president, National Aniline Division, Allied Chemical Corp., New York 6, N. Y., has announced that the new 20 million pound-per-year Actol polyether plant at Baton Rouge, La., is now completed. At the same time, James G. Fox, Jr., president of the Division, announced that plans were underway to construct a 15-million pound isocyanate plant in Southern California, at a site not yet decided upon, to serve the growing western market for urethane foam, coatings and elastomers.

Rockwell Manufacturing Co., Pittsburgh 8, Pa., is the first corporation to establish a distinguished professorship in engineering at Pennsylvania State University, as part of the University's newly established Great Scholars Program.

Governor Otto Kerner of Illinois has recognized the 140th National ACS Meeting, to be held in Chicago, by designating the week of Sept. 3-9, 1961, as "Chemical Week in Illinois." We still hope that someone will designate a "Scientists' Week" or a "Chemists' Week." Last Fall, the Governor of Connecticut proclaimed a "Family Doctor Week" for that state, which doubtless was more pleasing to the physicians and the public than a "Family Medicine Week" would have been.

Dr. Joseph H. Dusenbury, F.A.I.C., has been appointed section leader, wool research, by Deering Milliken Research Corporation, Spartanburg, S. C. He was formerly associate research director of the Textile Research Institute, Princeton, N. J.

NOW OVER 5100
BIOS CHEMICALS

- χβ-DITHIOPROPIONIC ACID
- DITHIORESORCINOL
- DITHIOSALICYLIC ACID
- DITHIOTHYMINE
- DITHIOURACIL
- DITHRANOL
- DI-N-TOLYLMERCURY
- DIVINYLSULFONE
- DURENEDIAMINE
- DUROHYDROQUINONE
- DUROQUINONE
- DYSPROSIUM
- α-ELAEOSTEARIC ACID
- ELAIDIC ACID
- ELAIDIN

Ask for our new complete catalogue.

BIOS Laboratories, Inc.
17 West 60th St. New York 23, N. Y.
PLaza 7-8171

CSC

YOUR BEST SOURCE
FOR THE CHEMICALS
YOUR INDUSTRY USES

All you need—at maximum speed! Commercial Solvents is a prime source of first-grade chemicals to serve every industrial, agricultural, and animal nutrition purpose. Be sure of quality. Be sure of service. Be sure of delivery. Call the Commercial Solvents Corporation office nearest you!

ANIMAL NUTRITION PRODUCTS
Baciferm® Zinc Bacitracin Feed Supplements • Vitamin Feed Supplements • Silotracin Antibiotic Silage Preservative

AGRICULTURAL CHEMICALS
Hi-D® Ammonium Nitrate Fertilizer • DIXSOL® and DRI-SOL® Nitrogen Solutions • Anhydrous Ammonia • Metaldehyde

INDUSTRIAL CHEMICALS
Methanol • Butanol • Ethyl Alcohol • Formaldehyde • Methylamines • Pentaerythritol

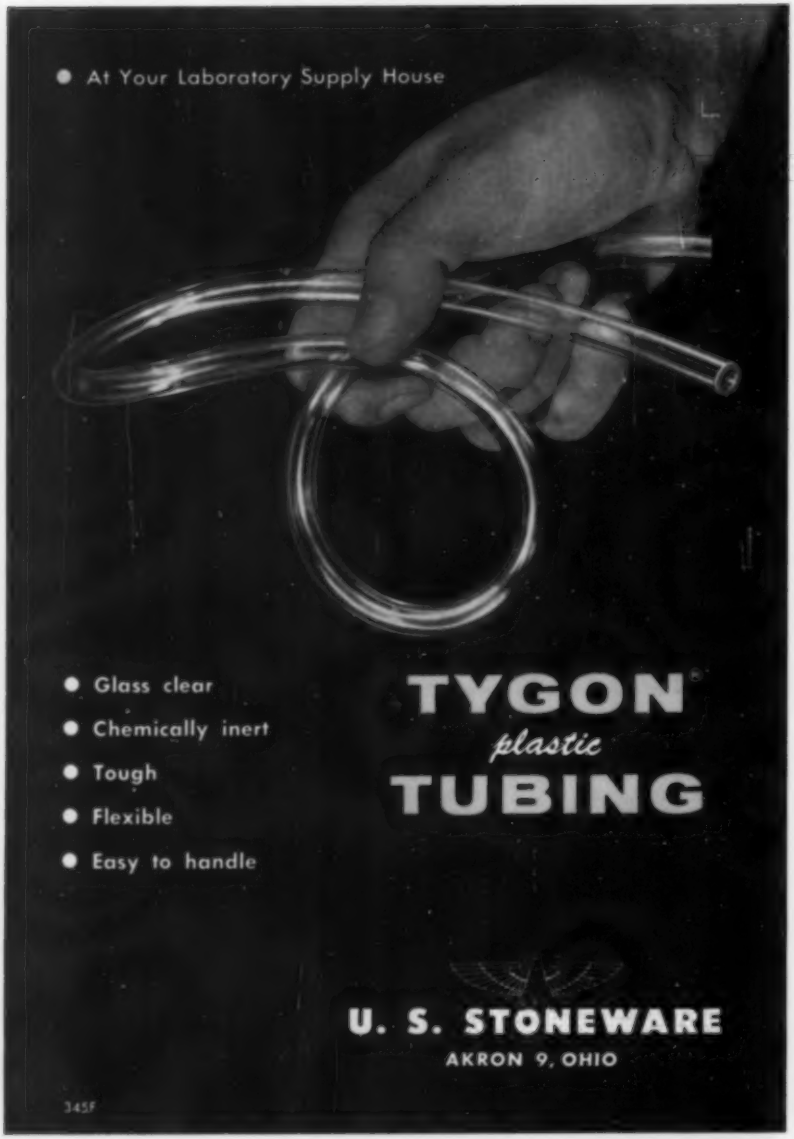
NITROPARAFFINS
2-Nitropropane • Nitromethane • Aminohydroxy Compounds • Alkaterges® • Hydroxylamine Salts • Oxazoline Waxes

PHARMACEUTICAL CHEMICALS
Bacitracin • Riboflavin • Monosodium Glutamate

CSC

COMMERCIAL SOLVENTS CORPORATION

EXECUTIVE HEADQUARTERS: 260 Madison Avenue, New York 16, N. Y. • OFFICES IN PRINCIPAL CITIES
PLANTS: Sterlington, La. • Peoria, Ill. • Terre Haute, Ind. • Agnew, Calif. • Newark, N. J. • Harvey, La.


At Your Laboratory Supply House
Glass clear
Chemically inert
Tough
Flexible
Easy to handle
TYGON®
plastic
TUBING
U. S. STONEWARE
AKRON 9, OHIO
345F